

The Haynesville Bridge (#5623) on U.S. Route 2A in Haynesville spans over the Mattawamkeag River. The east and west branches of the Mattawamkeag converge just 2,230 feet upstream. The watershed area for the bridge is fairly large at 535 square miles stretching north and west. The drainage basin characteristics for the bridge were provided by the Maine Department of Transportation Environmental Office - Hydrology Section. Peak flows were computed using the 1999 U.S.G.S. full regression equation and are reported below. There are no FEMA flood insurance studies for Haynesville. There is a FEMA flood insurance rate map effective 1985, but it only shows the 100 year flood area with no contours. The map does show the 100 year flood staying under the bridge. The existing plans also show the flood of 1936 staying under the bridge at elevation 377.9 NGVD. Due to the scope of the project, no other hydraulic analyses were completed.

Scour was qualitatively assessed based on existing information. The bridge is not scour critical and does not have a history of scour issues. In comparing the existing plans and the current survey, it doesn't appear the streambed has changed significantly. The streambed around pier 1 is at most 5 inches lower on the channel side. There is a small scour hole near the upstream end, channel side of pier 2 (visible on the topographic plan). This lowest point of the streambed is approximately 3'-3" lower than what's shown on the existing plans, but the existing plans may not portray an extensive river survey. The bottom of the scour hole is about at the same elevation as the top of the pile cap on pier 2. Since the bridge is supported by piles and has a proven history, the scour hole should just be monitored through routine underwater inspection. The abutment slopes are armored with riprap, but it is small and sparse in some areas. These areas should be supplemented with additional heavy riprap as part of any rehabilitation project.

Drainage Area = 535 mi²

Wetlands = 15.9 %

Ordinary High Water (Q_{1.1}) = 3,997 cfs

10 Year Flood (Q₁₀) = 10,753 cfs

25 Year Flood (Q₂₅) = 12,822 cfs

Design Discharge (Q₅₀) = 14,361 cfs

Check Discharge (Q₁₀₀) = 15,981 cfs

Q₅₀₀ = 19,757 cfs

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